

Sequence Listing

<110> Japan Atomic Energy Research Institute

<120> A method for efficiently determining a DNA strand  
break

<130> 030217

<160> 4

<200> 1

<211> 284

<212> PRT

<213> Deinococcus radiodurans, strain KD8301

<220>

<223> Amino acid sequence of DNA repair promoting protein,  
PprA, of Deinococcus radiodurans, strain KD8301.

<400> 1

atg gca agg gct aaa gca aaa gac caa acg gac ggc atc tac gcc gcc 48

Met Ala Arg Ala Lys Ala Lys Asp Gln Thr Asp Gly Ile Tyr Ala Ala

1

5

10

15

ttc gac acc ttg atg agc acg gcg ggc gtg gac agc cag atc gcc gcc 96

Phe Asp Thr Leu Met Ser Thr Ala Gly Val Asp Ser Gln Ile Ala Ala

20

25

30

ctc gcc gcg agt gag gcc gac gcg ggc acg ctg gac gcg gcg ctc acg 144

Leu Ala Ala Ser Glu Ala Asp Ala Gly Thr Leu Asp Ala Ala Leu Thr

35

40

45

cag tcc ttg caa gaa gcg cag ggg cgc tgg ggg ctg ggg ctg cac cac 192

Gln Ser Leu Gln Glu Ala Gln Gly Arg Trp Gly Leu Gly Leu His His

50

55

60

ctg cgc cat gag gcg cg<sub>g</sub> ctg acc gac gac ggc gac atc gaa att ctg 240  
Leu Arg His Glu Ala Arg Leu Thr Asp Asp Gly Asp Ile Glu Ile Leu  
65 70 75 80  
acc gat ggc cgc ccc agc gcc cgc gtg agc gag ggc ttc gga gca ctc 288  
Thr Asp Gly Arg Pro Ser Ala Arg Val Ser Glu Gly Phe Gly Ala Leu  
85 90 95  
g<sub>c</sub>g cag gcc tac g<sub>c</sub>g ccc atg cag g<sub>c</sub>g ctc gac gaa cgc ggc ctg agc 336  
Ala Gln Ala Tyr Ala Pro Met Gln Ala Leu Asp Glu Arg Gly Leu Ser  
100 105 110  
cag tgg g<sub>c</sub>g g<sub>c</sub>g ctc ggc gag ggc tac cgc gct ccc ggc gac ttg ccg 384  
Gln Trp Ala Ala Leu Gly Glu Gly Tyr Arg Ala Pro Gly Asp Leu Pro  
115 120 125  
ttg g<sub>c</sub>g cag ctc aag gtg ctg atc gag cac gcc cgc gac ttc gaa acc 432  
Leu Ala Gln Leu Lys Val Leu Ile Glu His Ala Arg Asp Phe Glu Thr  
130 135 140  
gac tgg tcg g<sub>c</sub>g ggg cgc ggc gaa acc ttt cag cgc gtg tgg cgc aag 480  
Asp Trp Ser Ala Gly Arg Gly Glu Thr Phe Gln Arg Val Trp Arg Lys  
145 150 155 160  
ggc gac acc ctg ttt gtc gag gtg gcc cgg ccc g<sub>c</sub>g tcc gcc gag gcc 528  
Gly Asp Thr Leu Phe Val Glu Val Ala Arg Pro Ala Ser Ala Glu Ala  
165 170 175  
g<sub>c</sub>g ctc tcc gac gct gcc tgg gac gtg atc gcc agc atc aag gac cgc 576  
Ala Leu Ser Asp Ala Ala Trp Asp Val Ile Ala Ser Ile Lys Asp Arg  
180 185 190  
gcc ttc cag cgt gag ctg atg cgc cgc agc gag aag gac ggg atg ctc 624  
Ala Phe Gln Arg Glu Leu Met Arg Arg Ser Glu Lys Asp Gly Met Leu  
195 200 205  
ggc gcc ctg ctc ggg gct cgc cac gcc ggg gcc aag gcc aac ctc gcc 672

Gly Ala Leu Leu Gly Ala Arg His Ala Gly Ala Lys Ala Asn Leu Ala  
210 215 220  
cag ctg ccc gaa gcg cac ttc acc gtg cag gcg ttc gtg cag acc ctc 720  
Gln Leu Pro Glu Ala His Phe Thr Val Gln Ala Phe Val Gln Thr Leu  
225 230 235 240  
agc gga gcc gcc gcc cgcc aac gcc gag gag tac cgcc gcg gcc ctg aaa 768  
Ser Gly Ala Ala Ala Arg Asn Ala Glu Glu Tyr Arg Ala Ala Leu Lys  
245 250 255  
acc gcc gcc gct gcg ctg gag gaa tac cag ggc gtg acc acc cgcc caa 816  
Thr Ala Ala Ala Ala Leu Glu Glu Tyr Gln Gly Val Thr Thr Arg Gln  
260 265 270  
ctg tcc gaa gtg ctg cgcc cac ggc ctg cgcc gag agc tga 855  
Leu Ser Glu Val Leu Arg His Gly Leu Arg Glu Ser Sto  
275 280 285

<200> 2  
<211> 855  
<212> DNA  
<213> Deinococcus radiodurans, strain KD8301  
<220>  
<223> Nucleotide sequence of DNA repair promoting protein,  
pprA, of Deinococcus radiodurans, strain KD8301.

<400> 2  
atggcaaggg ctaaagcaaa agaccaaactg gacggcatct acgcccctt cgacaccttg 60  
atgagcacgg cgggcgtgga cagccagatc gccgccctcg ccgcgagtga ggccgacgctg 120  
ggcacgctgg acgcggcgct cacgcagtcc ttgcaagaag cgcaggggcg ctggggctg 180  
ggctgcacc acctgcgcca tgaggcgcgg ctgaccgacg acggcgacat cgaaattctg 240

accgatggcc gccccagcgc ccgcgtgagc gagggcttcg gagcactcgc gcaggcctac 300  
gcgcggcatgc aggcgctcga cgaacgcggc ctgagccagt gggcggcgct cggcgagggc 360  
taccgcgctc ccggcgactt gccgttggcg cagctaagg tgctgatcga gcacgcccgc 420  
gacttcgaaa ccgactggtc ggccggggcgc ggcgaaacct ttcagcgcgt gtggcgcaag 480  
ggcgacaccc tggttgtcga ggtggcccg cccgcgtccg ccgaggccgc gctctccgac 540  
gctgcctggg acgtgatcgc cagcatcaag gaccgcgcct tccagcgtga gctgatgcgc 600  
cgcagcgaga aggacggat gtcggcgcc ctgctcgggg ctcgcccacgc cggggccaag 660  
gccaacctcg cccagctgcc cgaagcgcac ttccaccgtgc aggcggtcgt gcagaccctc 720  
agcggagccg ccgcccccaa cgccgaggag taccgcgcgg ccctgaaaac cgccgcccgt 780  
gcgcgtggagg aataccaggg cgtgaccacc cgccaactgt ccgaagtgct gcggcacggc 840  
ctgcgcgaga gctga

855

<200> 3

<211> 35

<212> DNA

<213> Artificial sequence

<220>

<223> Sense primer for amplifying pprA gene.

<400> 3

ggcataata aaggccatat ggcaagggt aaagc

35

<200> 4

<211> 32

<212> DNA

<213> Artificial sequence

<220>

<223> Antisense primer for amplifying pprA gene.

<400> 4

ttttggatcc tcagctctcg cgcaggccgt gc

32